

SEQUENCE LISTING

<110> Frank, Markus

Sayegh, Mohamed

<120> A Gene Encoding a Multidrug Resistance Human P-Glycoprotein
Homologue on Chromosome 7p15-21 and Uses Thereof

<130> 81994/268611

<160> 19

<170> PatentIn version 3.0

<210> 1

<211> 659

<212> PRT

<213> Homo sapiens

<400> 1

Met	Leu	Ala	Glu	Lys	Gly	Ala	His	Ala	Glu	Leu	Met	Ala	Lys	Arg	Gly	1	5	10	15
Leu	Tyr	Tyr	Ser	Leu	Val	Met	Ser	Gln	Asp	Ile	Lys	Lys	Ala	Asp	Glu	20	25	30	
Gln	Met	Glu	Ser	Met	Thr	Tyr	Ser	Thr	Glu	Arg	Lys	Thr	Asn	Ser	Leu	35	40	45	
Pro	Leu	His	Ser	Val	Lys	Ser	Ile	Lys	Ser	Asp	Phe	Ile	Asp	Lys	Ala	50	55	60	
Glu	Glu	Ser	Thr	Gln	Ser	Lys	Glu	Ile	Ser	Leu	Pro	Glu	Val	Ser	Leu	65	70	75	80
Leu	Lys	Ile	Leu	Lys	Leu	Asn	Lys	Pro	Glu	Trp	Pro	Phe	Val	Val	Leu	85	90	95	
Gly	Thr	Leu	Ala	Ser	Val	Leu	Asn	Gly	Thr	Val	His	Pro	Val	Phe	Ser	100	105	110	
Ile	Ile	Phe	Ala	Lys	Ile	Ile	Thr	Met	Phe	Gly	Asn	Asn	Asp	Lys	Thr	115	120	125	
Thr	Leu	Lys	His	Asp	Ala	Glu	Ile	Tyr	Ser	Met	Ile	Phe	Val	Ile	Leu	130	135	140	
Gly	Val	Ile	Cys	Phe	Val	Ser	Tyr	Phe	Met	Gln	Gly	Leu	Phe	Tyr	Gly	145	150	155	160

Arg	Ala	Gly	Glu	Ile	Leu	Thr	Met	Arg	Leu	Arg	His	Leu	Ala	Phe	Lys
				165					170					175	
Ala	Met	Leu	Tyr	Gln	Asp	Ile	Ala	Trp	Phe	Asp	Glu	Lys	Glu	Asn	Ser
			180					185					190		
Thr	Gly	Gly	Leu	Thr	Thr	Ile	Leu	Ala	Ile	Asp	Ile	Ala	Gln	Ile	Gln
		195					200					205			
Gly	Ala	Thr	Gly	Ser	Arg	Ile	Gly	Val	Leu	Thr	Gln	Asn	Ala	Thr	Asn
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Met	Gly	Leu	Ser	Val	Ile	Ile	Ser	Phe	Ile	Tyr	Gly	Trp	Glu	Met	Thr
225					230					235					240
Phe	Leu	Ile	Leu	Ser	Ile	Ala	Pro	Val	Leu	Ala	Val	Thr	Gly	Met	Ile
				245					250					255	
Glu	Thr	Ala	Ala	Met	Thr	Gly	Phe	Ala	Asn	Lys	Asp	Lys	Gln	Glu	Leu
			260					265					270		
Lys	His	Ala	Gly	Lys	Ile	Ala	Thr	Glu	Ala	Leu	Glu	Asn	Ile	Arg	Thr
		275					280					285			
Ile	Val	Ser	Leu	Thr	Arg	Glu	Lys	Ala	Phe	Glu	Gln	Met	Tyr	Glu	Glu
	290					295					300				
Met	Leu	Gln	Thr	Gln	His	Arg	Asn	Thr	Ser	Lys	Lys	Ala	Gln	Ile	Ile
305					310					315					320
Gly	Ser	Cys	Tyr	Ala	Phe	Ser	His	Ala	Phe	Ile	Tyr	Phe	Ala	Tyr	Ala
				325					330					335	
Ala	Gly	Phe	Arg	Phe	Gly	Ala	Tyr	Leu	Ile	Gln	Ala	Gly	Arg	Met	Thr
			340					345					350		
Pro	Glu	Gly	Met	Phe	Ile	Val	Phe	Thr	Ala	Ile	Ala	Tyr	Gly	Ala	Met
		355					360						365		
Ala	Ile	Gly	Lys	Thr	Leu	Val	Leu	Ala	Pro	Glu	Tyr	Ser	Lys	Ala	Lys
	370					375					380				
Ser	Gly	Ala	Ala	His	Leu	Phe	Ala	Leu	Leu	Glu	Lys	Lys	Pro	Asn	Ile
385					390					395					400
Asp	Ser	Arg	Ser	Gln	Glu	Gly	Lys	Lys	Pro	Asp	Thr	Cys	Glu	Gly	Asn
				405					410					415	
Leu	Glu	Phe	Arg	Glu	Val	Ser	Phe	Phe	Tyr	Pro	Cys	Arg	Pro	Asp	Val
			420					425					430		
Phe	Ile	Leu	Arg	Gly	Leu	Ser	Leu	Ser	Ile	Glu	Arg	Gly	Lys	Thr	Val
	435						440					445			
Ala	Phe	Val	Gly	Ser	Ser	Gly	Cys	Gly	Lys	Ser	Thr	Ser	Val	Gln	Leu
	450					455					460				
Leu	Gln	Arg	Leu	Tyr	Asp	Pro	Val	Gln	Gly	Gln	Val	Leu	Phe	Asp	Gly
465					470					475					480
Val	Asp	Ala	Lys	Glu	Leu	Asn	Val	Gln	Trp	Leu	Arg	Ser	Gln	Ile	Ala
				485					490					495	

Ile Val Pro Gln Glu Pro Val Leu Phe Asn Cys Ser Ile Ala Glu Asn
 500 505 510
 Ile Ala Tyr Gly Asp Asn Ser Arg Val Val Pro Leu Asp Glu Ile Lys
 515 520 525
 Glu Ala Ala Asn Ala Ala Asn Ile His Ser Phe Ile Glu Gly Leu Pro
 530 535 540
 Glu Lys Tyr Asn Thr Gln Val Gly Leu Lys Gly Ala Gln Leu Ser Gly
 545 550 555 560
 Gly Gln Lys Gln Arg Leu Ala Ile Ala Arg Ala Leu Leu Gln Lys Pro
 565 570 575
 Lys Ile Leu Leu Leu Asp Glu Ala Thr Ser Ala Leu Asp Asn Asp Ser
 580 585 590
 Glu Lys Val Val Gln His Ala Leu Asp Lys Ala Arg Thr Gly Arg Thr
 595 600 605
 Cys Leu Val Val Thr His Arg Leu Ser Ala Ile Gln Asn Ala Asp Leu
 610 615 620
 Ile Val Val Leu His Asn Gly Lys Ile Lys Glu Gln Gly Thr His Gln
 625 630 635 640
 Glu Leu Leu Arg Asn Arg Asp Ile Tyr Phe Lys Leu Val Asn Ala Gln
 645 650 655
 Ser Val Gln

 <210> 2
 <211> 812
 <212> PRT
 <213> Homo sapiens

 <400> 2
 Met Val Asp Glu Asn Asp Ile Arg Ala Leu Asn Val Arg His Tyr Arg
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 Asp His Ile Gly Val Val Ser Gln Glu Pro Val Leu Phe Gly Thr Thr
 20 25 30
 Ile Ser Asn Asn Ile Lys Tyr Gly Arg Asp Asp Val Thr Asp Glu Glu
 35 40 45
 Met Glu Arg Ala Ala Arg Glu Ala Asn Ala Tyr Asp Phe Ile Met Glu
 50 55 60
 Phe Pro Asn Lys Phe Asn Thr Leu Val Gly Glu Lys Gly Ala Gln Met
 65 70 75 80
 Ser Gly Gly Gln Lys Gln Arg Ile Ala Ile Ala Arg Ala Leu Val Arg
 85 90 95

Asn	Pro	Lys	Ile	Leu	Ile	Leu	Asp	Glu	Ala	Thr	Ser	Ala	Leu	Asp	Ser		
			100					105					110				
Glu	Ser	Lys	Ser	Ala	Val	Gln	Ala	Ala	Leu	Glu	Lys	Ala	Ser	Lys	Gly		
		115					120					125					
Arg	Thr	Thr	Ile	Val	Val	Ala	His	Arg	Leu	Ser	Thr	Ile	Arg	Ser	Ala		
	130					135					140						
Asp	Leu	Ile	Val	Thr	Leu	Lys	Asp	Gly	Met	Leu	Ala	Glu	Lys	Gly	Ala		
145					150					155					160		
His	Ala	Glu	Leu	Met	Ala	Lys	Arg	Gly	Leu	Tyr	Tyr	Ser	Leu	Val	Met		
				165					170					175			
Ser	Gln	Asp	Ile	Lys	Lys	Ala	Asp	Glu	Gln	Met	Glu	Ser	Met	Thr	Tyr		
		180						185					190				
Ser	Thr	Glu	Arg	Lys	Thr	Asn	Ser	Leu	Pro	Leu	His	Ser	Val	Lys	Ser		
		195					200					205					
Ile	Lys	Ser	Asp	Phe	Ile	Asp	Lys	Ala	Glu	Glu	Ser	Thr	Gln	Ser	Lys		
	210					215						220					
Glu	Ile	Ser	Leu	Pro	Glu	Val	Ser	Leu	Leu	Lys	Ile	Leu	Lys	Leu	Asn		
225					230					235					240		
Lys	Pro	Glu	Trp	Pro	Phe	Val	Val	Leu	Gly	Thr	Leu	Ala	Ser	Val	Leu		
				245					250					255			
Asn	Gly	Thr	Val	His	Pro	Val	Phe	Ser	Ile	Ile	Phe	Ala	Lys	Ile	Ile		
			260					265					270				
Thr	Met	Phe	Gly	Asn	Asn	Asp	Lys	Thr	Thr	Leu	Lys	His	Asp	Ala	Glu		
		275					280					285					
Ile	Tyr	Ser	Met	Ile	Phe	Val	Ile	Leu	Gly	Val	Ile	Cys	Phe	Val	Ser		
	290					295					300						
Tyr	Phe	Met	Gln	Gly	Leu	Phe	Tyr	Gly	Arg	Ala	Gly	Glu	Ile	Leu	Thr		
305					310					315					320		
Met	Arg	Leu	Arg	His	Leu	Ala	Phe	Lys	Ala	Met	Leu	Tyr	Gln	Asp	Ile		
				325					330					335			
Ala	Trp	Phe	Asp	Glu	Lys	Glu	Asn	Ser	Thr	Gly	Gly	Leu	Thr	Thr	Ile		
			340					345					350				
Leu	Ala	Ile	Asp	Ile	Ala	Gln	Ile	Gln	Gly	Ala	Thr	Gly	Ser	Arg	Ile		
		355					360					365					
Gly	Val	Leu	Thr	Gln	Asn	Ala	Thr	Asn	Met	Gly	Leu	Ser	Val	Ile	Ile		
	370				375						380						
Ser	Phe	Ile	Tyr	Gly	Trp	Glu	Met	Thr	Phe	Leu	Ile	Leu	Ser	Ile	Ala		
385					390					395					400		
Pro	Val	Leu	Ala	Val	Thr	Gly	Met	Ile	Glu	Thr	Ala	Ala	Met	Thr	Gly		
				405					410					415			
Phe	Ala	Asn	Lys	Asp	Lys	Gln	Glu	Leu	Lys	His	Ala	Gly	Lys	Ile	Ala		
			420					425					430				

Thr Glu Ala Leu Glu Asn Ile Arg Thr Ile Val Ser Leu Thr Arg Glu
 435 440 445
 Lys Ala Phe Glu Gln Met Tyr Glu Glu Met Leu Gln Thr Gln His Arg
 450 455 460
 Asn Thr Ser Lys Lys Ala Gln Ile Ile Gly Ser Cys Tyr Ala Phe Ser
 465 470 475 480
 His Ala Phe Ile Tyr Phe Ala Tyr Ala Ala Gly Phe Arg Phe Gly Ala
 485 490 495
 Tyr Leu Ile Gln Ala Gly Arg Met Thr Pro Glu Gly Met Phe Ile Val
 500 505 510
 Phe Thr Ala Ile Ala Tyr Gly Ala Met Ala Ile Gly Lys Thr Leu Val
 515 520 525
 Leu Ala Pro Glu Tyr Ser Lys Ala Lys Ser Gly Ala Ala His Leu Phe
 530 535 540
 Ala Leu Leu Glu Lys Lys Pro Asn Ile Asp Ser Arg Ser Gln Glu Gly
 545 550 555 560
 Lys Lys Pro Asp Thr Cys Glu Gly Asn Leu Glu Phe Arg Glu Val Ser
 565 570 575
 Phe Phe Tyr Pro Cys Arg Pro Asp Val Phe Ile Leu Arg Gly Leu Ser
 580 585 590
 Leu Ser Ile Glu Arg Gly Lys Thr Val Ala Phe Val Gly Ser Ser Gly
 595 600 605
 Cys Gly Lys Ser Thr Ser Val Gln Leu Leu Gln Arg Leu Tyr Asp Pro
 610 615 620
 Val Gln Gly Gln Val Leu Phe Asp Gly Val Asp Ala Lys Glu Leu Asn
 625 630 635 640
 Val Gln Trp Leu Arg Ser Gln Ile Ala Ile Val Pro Gln Glu Pro Val
 645 650 655
 Leu Phe Asn Cys Ser Ile Ala Glu Asn Ile Ala Tyr Gly Asp Asn Ser
 660 665 670
 Arg Val Val Pro Leu Asp Glu Ile Lys Glu Ala Ala Asn Ala Ala Asn
 675 680 685
 Ile His Ser Phe Ile Glu Gly Leu Pro Glu Lys Tyr Asn Thr Gln Val
 690 695 700
 Gly Leu Lys Gly Ala Gln Leu Ser Gly Gly Gln Lys Gln Arg Leu Ala
 705 710 715 720
 Ile Ala Arg Ala Leu Leu Gln Lys Pro Lys Ile Leu Leu Leu Asp Glu
 725 730 735
 Ala Thr Ser Ala Leu Asp Asn Asp Ser Glu Lys Val Val Gln His Ala
 740 745 750
 Leu Asp Lys Ala Arg Thr Gly Arg Thr Cys Leu Val Val Thr His Arg
 755 760 765

Leu Ser Ala Ile Gln Asn Ala Asp Leu Ile Val Val Leu His Asn Gly
 770 775 780

Lys Ile Lys Glu Gln Gly Thr His Gln Glu Leu Leu Arg Asn Arg Asp
 785 790 795 800

Ile Tyr Phe Lys Leu Val Asn Ala Gln Ser Val Gln
 805 810

<210> 3

<211> 131

<212> PRT

<213> Homo sapiens

<400> 3

Met Val Asp Glu Asn Asp Ile Arg Ala Leu Asn Val Arg His Tyr Arg
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Asp His Ile Gly Val Val Ser Gln Glu Pro Val Leu Phe Gly Thr Thr
 20 25 30

Ile Ser Asn Asn Ile Lys Tyr Gly Arg Asp Asp Val Thr Asp Glu Glu
 35 40 45

Met Glu Arg Ala Ala Arg Glu Ala Asn Ala Tyr Asp Phe Ile Met Glu
 50 55 60

Phe Pro Asn Lys Phe Asn Thr Leu Val Gly Glu Lys Gly Ala Gln Met
 65 70 75 80

Ser Gly Gly Gln Lys Gln Arg Ile Ala Ile Ala Arg Ala Leu Val Arg
 85 90 95

Asn Pro Lys Ile Leu Ile Leu Asp Glu Ala Thr Ser Ala Leu Asp Ser
 100 105 110

Glu Ser Lys Ser Ala Val Gln Ala Ala Leu Glu Lys Asp Thr Pro Arg
 115 120 125

Tyr Ser Phe
 130

<210> 4

<211> 1058

<212> PRT

<213> Homo sapiens

<220>

<221> Note

<222> (66) .. (66)

<223> Xaa at position 66 represents any L amino acid

<400> 4

Met	Val	Ile	Ser	Leu	Thr	Ser	Lys	Glu	Leu	Ser	Ala	Tyr	Ser	Lys	Ala
1				5					10					15	
Gly	Ala	Val	Ala	Glu	Glu	Val	Leu	Ser	Ser	Ile	Arg	Thr	Val	Ile	Ala
			20					25					30		
Phe	Arg	Ala	Gln	Glu	Lys	Glu	Leu	Gln	Arg	Ser	Phe	Leu	Leu	Asn	Ile
		35					40					45			
Thr	Arg	Tyr	Ala	Trp	Phe	Tyr	Phe	Pro	Gln	Trp	Leu	Leu	Ser	Cys	Val
	50					55					60				
Leu	Xaa	Phe	Val	Arg	Tyr	Thr	Gln	Asn	Leu	Lys	Asp	Ala	Lys	Asp	Phe
65					70					75					80
Gly	Ile	Lys	Arg	Thr	Ile	Ala	Ser	Lys	Val	Ser	Leu	Gly	Ala	Val	Tyr
				85					90					95	
Phe	Phe	Met	Asn	Gly	Thr	Tyr	Gly	Leu	Ala	Phe	Trp	Tyr	Gly	Thr	Ser
			100					105					110		
Leu	Ile	Leu	Asn	Gly	Glu	Pro	Gly	Tyr	Thr	Ile	Gly	Thr	Val	Leu	Ala
		115					120					125			
Val	Phe	Phe	Ser	Val	Ile	His	Ser	Ser	Tyr	Cys	Ile	Gly	Ala	Ala	Val
	130					135					140				
Pro	His	Phe	Glu	Thr	Phe	Ala	Ile	Ala	Arg	Gly	Ala	Ala	Phe	His	Ile
145					150					155					160
Phe	Gln	Val	Ile	Asp	Lys	Lys	Pro	Ser	Ile	Asp	Asn	Phe	Ser	Thr	Ala
				165					170					175	
Gly	Tyr	Lys	Pro	Glu	Ser	Ile	Glu	Gly	Thr	Val	Glu	Phe	Lys	Asn	Val
			180					185					190		
Ser	Phe	Asn	Tyr	Pro	Ser	Arg	Pro	Ser	Ile	Lys	Ile	Leu	Lys	Gly	Leu
		195				200						205			
Asn	Leu	Arg	Ile	Lys	Ser	Gly	Glu	Thr	Val	Ala	Leu	Val	Gly	Leu	Asn
	210					215					220				
Gly	Ser	Gly	Lys	Ser	Thr	Val	Val	Gln	Leu	Leu	Gln	Arg	Leu	Tyr	Asp
225					230					235					240
Pro	Asp	Asp	Gly	Phe	Ile	Met	Val	Asp	Glu	Asn	Asp	Ile	Arg	Ala	Leu
			245						250					255	
Asn	Val	Arg	His	Tyr	Arg	Asp	His	Ile	Gly	Val	Val	Ser	Gln	Glu	Pro
			260					265					270		
Val	Leu	Phe	Gly	Thr	Thr	Ile	Ser	Asn	Asn	Ile	Lys	Tyr	Gly	Arg	Asp
		275					280					285			
Asp	Val	Thr	Asp	Glu	Glu	Met	Glu	Arg	Ala	Ala	Arg	Glu	Ala	Asn	Ala
	290					295					300				

Tyr	Asp	Phe	Ile	Met	Glu	Phe	Pro	Asn	Lys	Phe	Asn	Thr	Leu	Val	Gly	305	310	315	320
Glu	Lys	Gly	Ala	Gln	Met	Ser	Gly	Gly	Gln	Lys	Gln	Arg	Ile	Ala	Ile	325	330	335	
Ala	Arg	Ala	Leu	Val	Arg	Asn	Pro	Lys	Ile	Leu	Ile	Leu	Asp	Glu	Ala	340	345	350	
Thr	Ser	Ala	Leu	Asp	Ser	Glu	Ser	Lys	Ser	Ala	Val	Gln	Ala	Ala	Leu	355	360	365	
Glu	Lys	Ala	Ser	Lys	Gly	Arg	Thr	Thr	Ile	Val	Val	Ala	His	Arg	Leu	370	375	380	
Ser	Thr	Ile	Arg	Ser	Ala	Asp	Leu	Ile	Val	Thr	Leu	Lys	Asp	Gly	Met	385	390	395	400
Leu	Ala	Glu	Lys	Gly	Ala	His	Ala	Glu	Leu	Met	Ala	Lys	Arg	Gly	Leu	405	410	415	
Tyr	Tyr	Ser	Leu	Val	Met	Ser	Gln	Asp	Ile	Lys	Lys	Ala	Asp	Glu	Gln	420	425	430	
Met	Glu	Ser	Met	Thr	Tyr	Ser	Thr	Glu	Arg	Lys	Thr	Asn	Ser	Leu	Pro	435	440	445	
Leu	His	Ser	Val	Lys	Ser	Ile	Lys	Ser	Asp	Phe	Ile	Asp	Lys	Ala	Glu	450	455	460	
Glu	Ser	Thr	Gln	Ser	Lys	Glu	Ile	Ser	Leu	Pro	Glu	Val	Ser	Leu	Leu	465	470	475	480
Lys	Ile	Leu	Lys	Leu	Asn	Lys	Pro	Glu	Trp	Pro	Phe	Val	Val	Leu	Gly	485	490	495	
Thr	Leu	Ala	Ser	Val	Leu	Asn	Gly	Thr	Val	His	Pro	Val	Phe	Ser	Ile	500	505	510	
Ile	Phe	Ala	Lys	Ile	Ile	Thr	Met	Phe	Gly	Asn	Asn	Asp	Lys	Thr	Thr	515	520	525	
Leu	Lys	His	Asp	Ala	Glu	Ile	Tyr	Ser	Met	Ile	Phe	Val	Ile	Leu	Gly	530	535	540	
Val	Ile	Cys	Phe	Val	Ser	Tyr	Phe	Met	Gln	Gly	Leu	Phe	Tyr	Gly	Arg	545	550	555	560
Ala	Gly	Glu	Ile	Leu	Thr	Met	Arg	Leu	Arg	His	Leu	Ala	Phe	Lys	Ala	565	570	575	
Met	Leu	Tyr	Gln	Asp	Ile	Ala	Trp	Phe	Asp	Glu	Lys	Glu	Asn	Ser	Thr	580	585	590	
Gly	Gly	Leu	Thr	Thr	Ile	Leu	Ala	Ile	Asp	Ile	Ala	Gln	Ile	Gln	Gly	595	600	605	
Ala	Thr	Gly	Ser	Arg	Ile	Gly	Val	Leu	Thr	Gln	Asn	Ala	Thr	Asn	Met	610	615	620	
Gly	Leu	Ser	Val	Ile	Ile	Ser	Phe	Ile	Tyr	Gly	Trp	Glu	Met	Thr	Phe	625	630	635	640

Leu	Ile	Leu	Ser	Ile	Ala	Pro	Val	Leu	Ala	Val	Thr	Gly	Met	Ile	Glu
				645					650					655	
Thr	Ala	Ala	Met	Thr	Gly	Phe	Ala	Asn	Lys	Asp	Lys	Gln	Glu	Leu	Lys
			660					665					670		
His	Ala	Gly	Lys	Ile	Ala	Thr	Glu	Ala	Leu	Glu	Asn	Ile	Arg	Thr	Ile
		675					680					685			
Val	Ser	Leu	Thr	Arg	Glu	Lys	Ala	Phe	Glu	Gln	Met	Tyr	Glu	Glu	Met
	690					695					700				
Leu	Gln	Thr	Gln	His	Arg	Asn	Thr	Ser	Lys	Lys	Ala	Gln	Ile	Ile	Gly
705					710					715					720
Ser	Cys	Tyr	Ala	Phe	Ser	His	Ala	Phe	Ile	Tyr	Phe	Ala	Tyr	Ala	Ala
				725					730					735	
Gly	Phe	Arg	Phe	Gly	Ala	Tyr	Leu	Ile	Gln	Ala	Gly	Arg	Met	Thr	Pro
			740					745					750		
Glu	Gly	Met	Phe	Ile	Val	Phe	Thr	Ala	Ile	Ala	Tyr	Gly	Ala	Met	Ala
		755					760					765			
Ile	Gly	Lys	Thr	Leu	Val	Leu	Ala	Pro	Glu	Tyr	Ser	Lys	Ala	Lys	Ser
	770					775					780				
Gly	Ala	Ala	His	Leu	Phe	Ala	Leu	Leu	Glu	Lys	Lys	Pro	Asn	Ile	Asp
785					790					795					800
Ser	Arg	Ser	Gln	Glu	Gly	Lys	Lys	Pro	Asp	Thr	Cys	Glu	Gly	Asn	Leu
				805					810					815	
Glu	Phe	Arg	Glu	Val	Ser	Phe	Phe	Tyr	Pro	Cys	Arg	Pro	Asp	Val	Phe
			820					825					830		
Ile	Leu	Arg	Gly	Leu	Ser	Leu	Ser	Ile	Glu	Arg	Gly	Lys	Thr	Val	Ala
		835					840					845			
Phe	Val	Gly	Ser	Ser	Gly	Cys	Gly	Lys	Ser	Thr	Ser	Val	Gln	Leu	Leu
	850					855					860				
Gln	Arg	Leu	Tyr	Asp	Pro	Val	Gln	Gly	Gln	Val	Leu	Phe	Asp	Gly	Val
865					870					875					880
Asp	Ala	Lys	Glu	Leu	Asn	Val	Gln	Trp	Leu	Arg	Ser	Gln	Ile	Ala	Ile
				885					890					895	
Val	Pro	Gln	Glu	Pro	Val	Leu	Phe	Asn	Cys	Ser	Ile	Ala	Glu	Asn	Ile
			900					905					910		
Ala	Tyr	Gly	Asp	Asn	Ser	Arg	Val	Val	Pro	Leu	Asp	Glu	Ile	Lys	Glu
		915					920					925			
Ala	Ala	Asn	Ala	Ala	Asn	Ile	His	Ser	Phe	Ile	Glu	Gly	Leu	Pro	Glu
		930				935					940				
Lys	Tyr	Asn	Thr	Gln	Val	Gly	Leu	Lys	Gly	Ala	Gln	Leu	Ser	Gly	Gly
945					950					955					960
Gln	Lys	Gln	Arg	Leu	Ala	Ile	Ala	Arg	Ala	Leu	Leu	Gln	Lys	Pro	Lys
				965					970					975	

Ile Leu Leu Leu Asp Glu Ala Thr Ser Ala Leu Asp Asn Asp Ser Glu
 980 985 990

Lys Val Val Gln His Ala Leu Asp Lys Ala Arg Thr Gly Arg Thr Cys
 995 1000 1005

Leu Val Val Thr His Arg Leu Ser Ala Ile Gln Asn Ala Asp Leu
 1010 1015 1020

Ile Val Val Leu His Asn Gly Lys Ile Lys Glu Gln Gly Thr His
 1025 1030 1035

Gln Glu Leu Leu Arg Asn Arg Asp Ile Tyr Phe Lys Leu Val Asn
 1040 1045 1050

Ala Gln Ser Val Gln
 1055

<210> 5

<211> 1222

<212> PRT

<213> Homo sapiens

<220>

<221> Note

<222> (230)..(230)

<223> Xaa at position 230 represents any L amino acid

<400> 5

Met Ile Leu Gly Ile Leu Ala Ser Leu Val Asn Gly Ala Cys Leu Pro
 1 5 10 15

Leu Met Pro Leu Val Leu Gly Glu Met Ser Asp Asn Leu Ile Ser Gly
 20 25 30

Cys Leu Val Gln Thr Asn Thr Tyr Ser Phe Phe Arg Leu Thr Leu Tyr
 35 40 45

Tyr Val Gly Ile Gly Val Ala Ala Leu Ile Phe Gly Tyr Ile Gln Ile
 50 55 60

Ser Leu Trp Ile Ile Thr Ala Ala Arg Gln Thr Lys Arg Ile Arg Lys
 65 70 75 80

Gln Phe Phe His Ser Val Leu Ala Gln Asp Ile Gly Trp Phe Asp Ser
 85 90 95

Cys Asp Ile Gly Glu Leu Asn Thr Arg Met Thr Asp Ile Asp Lys Ile
 100 105 110

Ser Asp Gly Ile Gly Asp Lys Ile Ala Leu Leu Phe Gln Asn Met Ser
 115 120 125

Thr	Phe	Ser	Ile	Gly	Leu	Ala	Val	Gly	Leu	Val	Lys	Gly	Trp	Lys	Leu	130	135	140
Thr	Leu	Val	Thr	Leu	Ser	Thr	Ser	Pro	Leu	Ile	Met	Ala	Ser	Ala	Ala	145	150	155
Ala	Cys	Ser	Arg	Met	Val	Ile	Ser	Leu	Thr	Ser	Lys	Glu	Leu	Ser	Ala	165	170	175
Tyr	Ser	Lys	Ala	Gly	Ala	Val	Ala	Glu	Glu	Val	Leu	Ser	Ser	Ile	Arg	180	185	190
Thr	Val	Ile	Ala	Phe	Arg	Ala	Gln	Glu	Lys	Glu	Leu	Gln	Arg	Ser	Phe	195	200	205
Leu	Leu	Asn	Ile	Thr	Arg	Tyr	Ala	Trp	Phe	Tyr	Phe	Pro	Gln	Trp	Leu	210	215	220
Leu	Ser	Cys	Val	Leu	Xaa	Phe	Val	Arg	Tyr	Thr	Gln	Asn	Leu	Lys	Asp	225	230	235
Ala	Lys	Asp	Phe	Gly	Ile	Lys	Arg	Thr	Ile	Ala	Ser	Lys	Val	Ser	Leu	245	250	255
Gly	Ala	Val	Tyr	Phe	Phe	Met	Asn	Gly	Thr	Tyr	Gly	Leu	Ala	Phe	Trp	260	265	270
Tyr	Gly	Thr	Ser	Leu	Ile	Leu	Asn	Gly	Glu	Pro	Gly	Tyr	Thr	Ile	Gly	275	280	285
Thr	Val	Leu	Ala	Val	Phe	Phe	Ser	Val	Ile	His	Ser	Ser	Tyr	Cys	Ile	290	295	300
Gly	Ala	Ala	Val	Pro	His	Phe	Glu	Thr	Phe	Ala	Ile	Ala	Arg	Gly	Ala	305	310	315
Ala	Phe	His	Ile	Phe	Gln	Val	Ile	Asp	Lys	Lys	Pro	Ser	Ile	Asp	Asn	325	330	335
Phe	Ser	Thr	Ala	Gly	Tyr	Lys	Pro	Glu	Ser	Ile	Glu	Gly	Thr	Val	Glu	340	345	350
Phe	Lys	Asn	Val	Ser	Phe	Asn	Tyr	Pro	Ser	Arg	Pro	Ser	Ile	Lys	Ile	355	360	365
Leu	Lys	Gly	Leu	Asn	Leu	Arg	Ile	Lys	Ser	Gly	Glu	Thr	Val	Ala	Leu	370	375	380
Val	Gly	Leu	Asn	Gly	Ser	Gly	Lys	Ser	Thr	Val	Val	Gln	Leu	Leu	Gln	385	390	395
Arg	Leu	Tyr	Asp	Pro	Asp	Asp	Gly	Phe	Ile	Met	Val	Asp	Glu	Asn	Asp	405	410	415
Ile	Arg	Ala	Leu	Asn	Val	Arg	His	Tyr	Arg	Asp	His	Ile	Gly	Val	Val	420	425	430
Ser	Gln	Glu	Pro	Val	Leu	Phe	Gly	Thr	Thr	Ile	Ser	Asn	Asn	Ile	Lys	435	440	445
Tyr	Gly	Arg	Asp	Asp	Val	Thr	Asp	Glu	Glu	Met	Glu	Arg	Ala	Ala	Arg	450	455	460

Glu	Ala	Asn	Ala	Tyr	Asp	Phe	Ile	Met	Glu	Phe	Pro	Asn	Lys	Phe	Asn	
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Thr	Leu	Val	Gly	Glu	Lys	Gly	Ala	Gln	Met	Ser	Gly	Gly	Gln	Lys	Gln	
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Arg	Ile	Ala	Ile	Ala	Arg	Ala	Leu	Val	Arg	Asn	Pro	Lys	Ile	Leu	Ile	
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Leu	Asp	Glu	Ala	Thr	Ser	Ala	Leu	Asp	Ser	Glu	Ser	Lys	Ser	Ala	Val	
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Gln	Ala	Ala	Leu	Glu	Lys	Ala	Ser	Lys	Gly	Arg	Thr	Thr	Ile	Val	Val	
	530					535					540					
Ala	His	Arg	Leu	Ser	Thr	Ile	Arg	Ser	Ala	Asp	Leu	Ile	Val	Thr	Leu	
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Lys	Asp	Gly	Met	Leu	Ala	Glu	Lys	Gly	Ala	His	Ala	Glu	Leu	Met	Ala	
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Lys	Arg	Gly	Leu	Tyr	Tyr	Ser	Leu	Val	Met	Ser	Gln	Asp	Ile	Lys	Lys	
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Ala	Asp	Glu	Gln	Met	Glu	Ser	Met	Thr	Tyr	Ser	Thr	Glu	Arg	Lys	Thr	
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Asn	Ser	Leu	Pro	Leu	His	Ser	Val	Lys	Ser	Ile	Lys	Ser	Asp	Phe	Ile	
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Asp	Lys	Ala	Glu	Glu	Ser	Thr	Gln	Ser	Lys	Glu	Ile	Ser	Leu	Pro	Glu	
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Val	Ser	Leu	Leu	Lys	Ile	Leu	Lys	Leu	Asn	Lys	Pro	Glu	Trp	Pro	Phe	
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Val	Val	Leu	Gly	Thr	Leu	Ala	Ser	Val	Leu	Asn	Gly	Thr	Val	His	Pro	
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Val	Phe	Ser	Ile	Ile	Phe	Ala	Lys	Ile	Ile	Thr	Met	Phe	Gly	Asn	Asn	
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Val	Ile	Leu	Gly	Val	Ile	Cys	Phe	Val	Ser	Tyr	Phe	Met	Gln	Gly	Leu	
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Glu	Asn	Ser	Thr	Gly	Gly	Leu	Thr	Thr	Ile	Leu	Ala	Ile	Asp	Ile	Ala	
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Gln	Ile	Gln	Gly	Ala	Thr	Gly	Ser	Arg	Ile	Gly	Val	Leu	Thr	Gln	Asn	
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 Gly Met Ile Glu Thr Ala Ala Met Thr Gly Phe Ala Asn Lys Asp Lys
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 Gln Glu Leu Lys His Ala Gly Lys Ile Ala Thr Glu Ala Leu Glu Asn
 835 840 845
 Ile Arg Thr Ile Val Ser Leu Thr Arg Glu Lys Ala Phe Glu Gln Met
 850 855 860
 Tyr Glu Glu Met Leu Gln Thr Gln His Arg Asn Thr Ser Lys Lys Ala
 865 870 875 880
 Gln Ile Ile Gly Ser Cys Tyr Ala Phe Ser His Ala Phe Ile Tyr Phe
 885 890 895
 Ala Tyr Ala Ala Gly Phe Arg Phe Gly Ala Tyr Leu Ile Gln Ala Gly
 900 905 910
 Arg Met Thr Pro Glu Gly Met Phe Ile Val Phe Thr Ala Ile Ala Tyr
 915 920 925
 Gly Ala Met Ala Ile Gly Lys Thr Leu Val Leu Ala Pro Glu Tyr Ser
 930 935 940
 Lys Ala Lys Ser Gly Ala Ala His Leu Phe Ala Leu Leu Glu Lys Lys
 945 950 955 960
 Pro Asn Ile Asp Ser Arg Ser Gln Glu Gly Lys Lys Pro Asp Thr Cys
 965 970 975
 Glu Gly Asn Leu Glu Phe Arg Glu Val Ser Phe Phe Tyr Pro Cys Arg
 980 985 990
 Pro Asp Val Phe Ile Leu Arg Gly Leu Ser Leu Ser Ile Glu Arg Gly
 995 1000 1005
 Lys Thr Val Ala Phe Val Gly Ser Ser Gly Cys Gly Lys Ser Thr
 1010 1015 1020
 Ser Val Gln Leu Leu Gln Arg Leu Tyr Asp Pro Val Gln Gly Gln
 1025 1030 1035
 Val Leu Phe Asp Gly Val Asp Ala Lys Glu Leu Asn Val Gln Trp
 1040 1045 1050
 Leu Arg Ser Gln Ile Ala Ile Val Pro Gln Glu Pro Val Leu Phe
 1055 1060 1065
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 1070 1075 1080
 Val Val Pro Leu Asp Glu Ile Lys Glu Ala Ala Asn Ala Ala Asn
 1085 1090 1095
 Ile His Ser Phe Ile Glu Gly Leu Pro Glu Lys Tyr Asn Thr Gln
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 Val Gly Leu Lys Gly Ala Gln Leu Ser Gly Gly Gln Lys Gln Arg
 1115 1120 1125

Leu Ala Ile Ala Arg Ala Leu Leu Gln Lys Pro Lys Ile Leu Leu
 1130 1135 1140
 Leu Asp Glu Ala Thr Ser Ala Leu Asp Asn Asp Ser Glu Lys Val
 1145 1150 1155
 Val Gln His Ala Leu Asp Lys Ala Arg Thr Gly Arg Thr Cys Leu
 1160 1165 1170
 Val Val Thr His Arg Leu Ser Ala Ile Gln Asn Ala Asp Leu Ile
 1175 1180 1185
 Val Val Leu His Asn Gly Lys Ile Lys Glu Gln Gly Thr His Gln
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 Glu Leu Leu Arg Asn Arg Asp Ile Tyr Phe Lys Leu Val Asn Ala
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<211> 1195

<212> PRT

<213> Homo sapiens

<400> 6

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 Cys Leu Val Gln Thr Asn Thr Tyr Ser Phe Phe Arg Leu Thr Leu Tyr
 35 40 45
 Tyr Val Gly Ile Gly Val Ala Ala Leu Ile Phe Gly Tyr Ile Gln Ile
 50 55 60
 Ser Leu Trp Ile Ile Thr Ala Ala Arg Gln Thr Lys Arg Ile Arg Lys
 65 70 75 80
 Gln Phe Phe His Ser Val Leu Ala Gln Asp Ile Gly Trp Phe Asp Ser
 85 90 95
 Cys Asp Ile Gly Glu Leu Asn Thr Arg Met Thr Asp Ile Asp Lys Ile
 100 105 110
 Ser Asp Gly Ile Gly Asp Lys Ile Ala Leu Leu Phe Gln Asn Met Ser
 115 120 125
 Thr Phe Ser Ile Gly Leu Ala Val Gly Leu Val Lys Gly Trp Lys Leu
 130 135 140
 Thr Leu Val Thr Leu Ser Thr Ser Pro Leu Ile Met Ala Ser Ala Ala
 145 150 155 160

Ala	Cys	Ser	Arg	Met	Val	Ile	Ser	Leu	Thr	Ser	Lys	Glu	Leu	Ser	Ala	165	170	175
Tyr	Ser	Lys	Ala	Gly	Ala	Val	Ala	Glu	Glu	Val	Leu	Ser	Ser	Ile	Arg	180	185	190
Thr	Val	Ile	Ala	Phe	Arg	Ala	Gln	Glu	Lys	Glu	Leu	Gln	Arg	Tyr	Thr	195	200	205
Gln	Asn	Leu	Lys	Asp	Ala	Lys	Asp	Phe	Gly	Ile	Lys	Arg	Thr	Ile	Ala	210	215	220
Ser	Lys	Val	Ser	Leu	Gly	Ala	Val	Tyr	Phe	Phe	Met	Asn	Gly	Thr	Tyr	225	230	235
Gly	Leu	Ala	Phe	Trp	Tyr	Gly	Thr	Ser	Leu	Ile	Leu	Asn	Gly	Glu	Pro	245	250	255
Gly	Tyr	Thr	Ile	Gly	Thr	Val	Leu	Ala	Val	Phe	Phe	Ser	Val	Ile	His	260	265	270
Ser	Ser	Tyr	Cys	Ile	Gly	Ala	Ala	Val	Pro	His	Phe	Glu	Thr	Phe	Ala	275	280	285
Ile	Ala	Arg	Gly	Ala	Ala	Phe	His	Ile	Phe	Gln	Val	Ile	Asp	Lys	Lys	290	295	300
Pro	Ser	Ile	Asp	Asn	Phe	Ser	Thr	Ala	Gly	Tyr	Lys	Pro	Glu	Ser	Ile	305	310	315
Glu	Gly	Thr	Val	Glu	Phe	Lys	Asn	Val	Ser	Phe	Asn	Tyr	Pro	Ser	Arg	325	330	335
Pro	Ser	Ile	Lys	Ile	Leu	Lys	Gly	Leu	Asn	Leu	Arg	Ile	Lys	Ser	Gly	340	345	350
Glu	Thr	Val	Ala	Leu	Val	Gly	Leu	Asn	Gly	Ser	Gly	Lys	Ser	Thr	Val	355	360	365
Val	Gln	Leu	Leu	Gln	Arg	Leu	Tyr	Asp	Pro	Asp	Asp	Gly	Phe	Ile	Met	370	375	380
Val	Asp	Glu	Asn	Asp	Ile	Arg	Ala	Leu	Asn	Val	Arg	His	Tyr	Arg	Asp	385	390	395
His	Ile	Gly	Val	Val	Ser	Gln	Glu	Pro	Val	Leu	Phe	Gly	Thr	Thr	Ile	405	410	415
Ser	Asn	Asn	Ile	Lys	Tyr	Gly	Arg	Asp	Asp	Val	Thr	Asp	Glu	Glu	Met	420	425	430
Glu	Arg	Ala	Ala	Arg	Glu	Ala	Asn	Ala	Tyr	Asp	Phe	Ile	Met	Glu	Phe	435	440	445
Pro	Asn	Lys	Phe	Asn	Thr	Leu	Val	Gly	Glu	Lys	Gly	Ala	Gln	Met	Ser	450	455	460
Gly	Gly	Gln	Lys	Gln	Arg	Ile	Ala	Ile	Ala	Arg	Ala	Leu	Val	Arg	Asn	465	470	475
Pro	Lys	Ile	Leu	Ile	Leu	Asp	Glu	Ala	Thr	Ser	Ala	Leu	Asp	Ser	Glu	485	490	495

Ser	Lys	Ser	Ala	Val	Gln	Ala	Ala	Leu	Glu	Lys	Ala	Ser	Lys	Gly	Arg		
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Thr	Thr	Ile	Val	Val	Ala	His	Arg	Leu	Ser	Thr	Ile	Arg	Ser	Ala	Asp		
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Leu	Ile	Val	Thr	Leu	Lys	Asp	Gly	Met	Leu	Ala	Glu	Lys	Gly	Ala	His		
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Ala	Glu	Leu	Met	Ala	Lys	Arg	Gly	Leu	Tyr	Tyr	Ser	Leu	Val	Met	Ser		
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Gln	Asp	Ile	Lys	Lys	Ala	Asp	Glu	Gln	Met	Glu	Ser	Met	Thr	Tyr	Ser		
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Thr	Glu	Arg	Lys	Thr	Asn	Ser	Leu	Pro	Leu	His	Ser	Val	Lys	Ser	Ile		
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Lys	Ser	Asp	Phe	Ile	Asp	Lys	Ala	Glu	Glu	Ser	Thr	Gln	Ser	Lys	Glu		
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Ile	Ser	Leu	Pro	Glu	Val	Ser	Leu	Leu	Lys	Ile	Leu	Lys	Leu	Asn	Lys		
	610					615					620						
Pro	Glu	Trp	Pro	Phe	Val	Val	Leu	Gly	Thr	Leu	Ala	Ser	Val	Leu	Asn		
625					630					635							
Gly	Thr	Val	His	Pro	Val	Phe	Ser	Ile	Ile	Phe	Ala	Lys	Ile	Ile	Thr		
				645				650						655			
Met	Phe	Gly	Asn	Asn	Asp	Lys	Thr	Thr	Leu	Lys	His	Asp	Ala	Glu	Ile		
			660					665					670				
Tyr	Ser	Met	Ile	Phe	Val	Ile	Leu	Gly	Val	Ile	Cys	Phe	Val	Ser	Tyr		
		675					680					685					
Phe	Met	Gln	Gly	Leu	Phe	Tyr	Gly	Arg	Ala	Gly	Glu	Ile	Leu	Thr	Met		
	690					695					700						
Arg	Leu	Arg	His	Leu	Ala	Phe	Lys	Ala	Met	Leu	Tyr	Gln	Asp	Ile	Ala		
705				710						715					720		
Trp	Phe	Asp	Glu	Lys	Glu	Asn	Ser	Thr	Gly	Gly	Leu	Thr	Thr	Ile	Leu		
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Ala	Ile	Asp	Ile	Ala	Gln	Ile	Gln	Gly	Ala	Thr	Gly	Ser	Arg	Ile	Gly		
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Val	Leu	Thr	Gln	Asn	Ala	Thr	Asn	Met	Gly	Leu	Ser	Val	Ile	Ile	Ser		
		755					760					765					
Phe	Ile	Tyr	Gly	Trp	Glu	Met	Thr	Phe	Leu	Ile	Leu	Ser	Ile	Ala	Pro		
	770					775					780						
Val	Leu	Ala	Val	Thr	Gly	Met	Ile	Glu	Thr	Ala	Ala	Met	Thr	Gly	Phe		
785					790					795					800		
Ala	Asn	Lys	Asp	Lys	Gln	Glu	Leu	Lys	His	Ala	Gly	Lys	Ile	Ala	Thr		
			805						810					815			
Glu	Ala	Leu	Glu	Asn	Ile	Arg	Thr	Ile	Val	Ser	Leu	Thr	Arg	Glu	Lys		
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Ala	Phe	Glu	Gln	Met	Tyr	Glu	Glu	Met	Leu	Gln	Thr	Gln	His	Arg	Asn	
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Thr	Ser	Lys	Lys	Ala	Gln	Ile	Ile	Gly	Ser	Cys	Tyr	Ala	Phe	Ser	His	
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Ala	Phe	Ile	Tyr	Phe	Ala	Tyr	Ala	Ala	Gly	Phe	Arg	Phe	Gly	Ala	Tyr	
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Leu	Ile	Gln	Ala	Gly	Arg	Met	Thr	Pro	Glu	Gly	Met	Phe	Ile	Val	Phe	
				885					890					895		
Thr	Ala	Ile	Ala	Tyr	Gly	Ala	Met	Ala	Ile	Gly	Lys	Thr	Leu	Val	Leu	
			900					905					910			
Ala	Pro	Glu	Tyr	Ser	Lys	Ala	Lys	Ser	Gly	Ala	Ala	His	Leu	Phe	Ala	
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Leu	Leu	Glu	Lys	Lys	Pro	Asn	Ile	Asp	Ser	Arg	Ser	Gln	Glu	Gly	Lys	
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Lys	Pro	Asp	Thr	Cys	Glu	Gly	Asn	Leu	Glu	Phe	Arg	Glu	Val	Ser	Phe	
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Phe	Tyr	Pro	Cys	Arg	Pro	Asp	Val	Phe	Ile	Leu	Arg	Gly	Leu	Ser	Leu	
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Val	Leu	Phe	Asn	Cys	Ser	Ile	Ala	Glu	Asn	Ile	Ala	Tyr	Gly	Asp		
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Lys	Gln	Arg	Leu	Ala	Ile	Ala	Arg	Ala	Leu	Leu	Gln	Lys	Pro	Lys		
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Glu	Lys	Val	Val	Gln	His	Ala	Leu	Asp	Lys	Ala	Arg	Thr	Gly	Arg		
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Thr	Cys	Leu	Val	Val	Thr	His	Arg	Leu	Ser	Ala	Ile	Gln	Asn	Ala		
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Asp Leu Ile Val Val Leu His Asn Gly Lys Ile Lys Glu Gln Gly
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Thr His Gln Glu Leu Leu Arg Asn Arg Asp Ile Tyr Phe Lys Leu
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Val Asn Ala Gln Ser Val Gln
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<213> Homo sapiens

<220>

<221> Note

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<223> Xaa at position 230 represents any L amino acid

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Cys Leu Val Gln Thr Asn Thr Tyr Ser Phe Phe Arg Leu Thr Leu Tyr
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Tyr Val Gly Ile Gly Val Ala Ala Leu Ile Phe Gly Tyr Ile Gln Ile
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Ser Leu Trp Ile Ile Thr Ala Ala Arg Gln Thr Lys Arg Ile Arg Lys
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Gln Phe Phe His Ser Val Leu Ala Gln Asp Ile Gly Trp Phe Asp Ser
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Cys Asp Ile Gly Glu Leu Asn Thr Arg Met Thr Asp Ile Asp Lys Ile
 100 105 110

Ser Asp Gly Ile Gly Asp Lys Ile Ala Leu Leu Phe Gln Asn Met Ser
 115 120 125

Thr Phe Ser Ile Gly Leu Ala Val Gly Leu Val Lys Gly Trp Lys Leu
 130 135 140

Thr Leu Val Thr Leu Ser Thr Ser Pro Leu Ile Met Ala Ser Ala Ala
 145 150 155 160

Ala Cys Ser Arg Met Val Ile Ser Leu Thr Ser Lys Glu Leu Ser Ala
 165 170 175

Tyr	Ser	Lys	Ala 180	Gly	Ala	Val	Ala	Glu 185	Glu	Val	Leu	Ser	Ile	Arg	
Thr	Val	Ile 195	Ala	Phe	Arg	Ala	Gln 200	Glu	Lys	Glu	Leu	Gln 205	Arg	Ser	Phe
Leu	Leu 210	Asn	Ile	Thr	Arg	Tyr 215	Ala	Trp	Phe	Tyr	Phe 220	Pro	Gln	Trp	Leu
Leu 225	Ser	Cys	Val	Leu	Xaa 230	Phe	Val	Arg	Tyr	Thr 235	Gln	Asn	Leu	Lys	Asp 240
Ala	Lys	Asp	Phe	Gly 245	Ile	Lys	Arg	Thr	Ile 250	Ala	Ser	Lys	Val	Ser 255	Leu
Gly	Ala	Val	Tyr 260	Phe	Phe	Met	Asn	Gly 265	Thr	Tyr	Gly	Leu	Ala 270	Phe	Trp
Tyr	Gly	Thr 275	Ser	Leu	Ile	Leu	Asn 280	Gly	Glu	Pro	Gly	Tyr 285	Thr	Ile	Gly
Thr	Val 290	Leu	Ala	Val	Phe	Phe 295	Ser	Val	Ile	His	Ser 300	Ser	Tyr	Cys	Ile
Gly 305	Ala	Ala	Val	Pro	His 310	Phe	Glu	Thr	Phe	Ala 315	Ile	Ala	Arg	Gly	Ala 320
Ala	Phe	His	Ile	Phe 325	Gln	Val	Ile	Asp	Lys 330	Lys	Pro	Ser	Ile	Asp 335	Asn
Phe	Ser	Thr 340	Ala	Gly	Tyr	Lys	Pro	Glu 345	Ser	Ile	Glu	Gly	Thr 350	Val	Glu
Phe	Lys 355	Asn	Val	Ser	Phe	Asn	Tyr 360	Pro	Ser	Arg	Pro	Ser 365	Ile	Lys	Ile
Leu	Lys 370	Gly	Leu	Asn	Leu	Arg 375	Ile	Lys	Ser	Gly	Glu 380	Thr	Val	Ala	Leu
Val 385	Gly	Leu	Asn	Gly	Ser 390	Gly	Lys	Ser	Thr	Val 395	Val	Gln	Leu	Leu	Gln 400
Arg	Leu	Tyr	Asp	Pro 405	Asp	Asp	Gly	Phe	Ile 410	Met	Val	Asp	Glu	Asn 415	Asp
Ile	Arg	Ala 420	Leu	Asn	Val	Arg	His	Tyr 425	Arg	Asp	His	Ile	Gly 430	Val	Val
Ser	Gln	Glu 435	Pro	Val	Leu	Phe	Gly 440	Thr	Thr	Ile	Ser	Asn 445	Asn	Ile	Lys
Tyr	Gly 450	Arg	Asp	Asp	Val	Thr 455	Asp	Glu	Glu	Met	Glu 460	Arg	Ala	Ala	Arg
Glu 465	Ala	Asn	Ala	Tyr	Asp 470	Phe	Ile	Met	Glu	Phe 475	Pro	Asn	Lys	Phe	Asn 480
Thr	Leu	Val	Gly	Glu 485	Lys	Gly	Ala	Gln	Met 490	Ser	Gly	Gly	Gln	Lys 495	Gln
Arg	Ile	Ala 500	Ile	Ala	Arg	Ala	Leu	Val 505	Arg	Asn	Pro	Lys	Ile 510	Leu	Ile

Ser Lys Val Ser Leu Gly Ala Val Tyr Phe Phe Met Asn Gly Thr Tyr
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aacagatgga gtcaatgaca tattctactg aaagaaagac caactcactt cctctgcaact 240
ctgtgaagag catcaagtca gacttcattg acaaggctga ggaatccacc caatctaaag 300
agataagtct tcctgaagtc tctctattaa aaatttttaa gttaaacaag cctgaatggc 360
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<211> 2856

<212> DNA

<213> Homo sapiens

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<211> 1175

<212> DNA

<213> Homo sapiens

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<211> 3177

<212> DNA

<213> Homo sapiens

<220>

<221> Note

<222> (198)..(198)

<223> n at position 198 represents any nucleotide (A, T, C or G)

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<211> 3702

<212> DNA

<213> Homo sapiens

<220>

<221> Note

<222> (723)..(723)

<223> n at position 723 represents any nucleotide (A, T, C or G)

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<211> 3621

<212> DNA

<213> Homo sapiens

<400> 14

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